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ABSTRACT

A learning strategy inventory composed of 201 multiple-choice items was developed based upon similar work and suggestions stemming from a literature review. Correlational and factor analyses, based on data for approximately 200 students, were identified and incorporated into a learning strategy training program. (See SO 008 593 for a report on the program.) The learning strategy inventory provided an effective basis for strategy training development. In addition, the learning strategy inventory provided a significant first step in the development of a more general instrument for diagnosing learning strategy inadequacies in specific individuals. The learning strategies inventory and its correlations and the factor scores correlations are located in the appendices. (Author/ND)

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AIR FORCE HUMAN RESOURCES LABORATORY

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LEARNING STRATEGY INVENT. DEVELOPMENT AND ASSESSMENT

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June 1975
Final Report for Period January 1974 – May 1975

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MARTY R. ROCKWAY, Technical Director
Technical Training Division

Approved for publication.

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A learning strategy inventory composed of 201 multiple-choice items, based upon similar work and aspects suggested from a literature review, was developed. Correlational and factor analyses (based on approximately 200 students) were performed to provide a basis for identifying trainable learning strategies. Four phases of the learning process were identified and incorporated into a learning strategy training program (reported elsewhere). The learning strategy inventory provided an effective basis for strategy training development. In addition, the learning strategy inventory provides a significant first step in the development of a more general instrument for diagnosing learning strategy inadequacies in specific individuals.

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SUMMARY

Purpose

The purpose of this research was to develop a means for determining which educationally relevant strategies are known and used by students who differ in intellectual ability and academic achievement. If trainable effective strategies can be identified in this manner, these strategies can then be incorporated in a learning strategy training program designed to enhance the learning skills of Air Force Personnel participating in technical training. Further, this approach to identifying strategies may prove useful in predicting an individual's academic achievements and in diagnosing his receptivity to particular teaching methods.

Approach

A Learning Strategy Inventory composed of 201 multiple choice items was created. Some of these items were derived from previous questionnaires for purposes of comparison with prior results, some were autobiographical in nature, and many were derived from empirical results appearing in the psychological and educational literature. The inventory was administered to over 200 students. A correlational analysis, relating inventory responses to measures of academic aptitude and achievement, and a factor analysis were performed on the resulting data to provide a basis for strategy identification.

Results

Our research with the empirically based Learning Strategy Inventory has allowed us to identify four phases of the learning process which can be fruitfully

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incorporated in a strategy training program: (a) identification of important and unfamiliar material, (b) application of techniques for the comprehension and retention of the identified material, (c) efficient retrieval of information under appropriate circumstances, and (d) effective coping with internal and external distractions while the above processes are occurring. High achievement students, as compared with low achievement students, indicated a greater utilization of effective strategies in each of these four phases.

Conclusions

In addition to providing an effective basis for strategy training development, the work with the Learning Strategy Inventory has also provided a significant first step in the development of a more general instrument for diagnosing learning strategy inadequacies. This instrument ultimately may serve as the foundation for individual prescription of strategy training and individual prescription of effective teaching methods.

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PREFACE

This report documents the development and preliminary assessment of a Learning Strategy Inventory. Research was accomplished under Project 1121, Advanced Technology for Air Force Technical Training. Dr. Marty R. Rockway was the Project Scientist, Dr. Gerard Deignan was the Task Scientist until 1 June 1974, and Dr. Ronald Spangenberg was the Task Scientist from 1 June 1974 to the present. Research contained in this report was conducted under the provisions of Contract Number F41609-74-C-0013 with Texas Christian University, Institute for the Study of Cognitive Systems, Fort Worth, Texas, 76129. Dr. Donald F. Dansereau was the Principal Investigator. This research is based upon work reported in AFHRL-TR-74-70, Learning Strategies: A Review and Synthesis on the Current Literature and upon previous work performed by the contractor under Contract Number F41609-73-C-0023. This previous work resulted in the publication of AFHRL-TR-73-51(I), Factors Related to Developing Instructional Information Sequences: Phase I, and AFHRL-TR-73-51 (II), Factors Relating to the Development of Optimal Instructional Information Sequences.

The many contributions of knowledge and time made by numerous individuals in the local communities and academic environs impelled the development and successful completion of this research. The excellent combined cooperation and coordination in recruitment of students for subjects by Drs Virginia M. Jarratt and Mildred O. Hogstel, TCU Harris School of Nursing and the Psychology Department Faculty played an important role in completing this research program.

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The Learning Strategy Inventory

The purpose of developing the Learning Strategy Inventory was to provide a means for determining which educationally relevant strategies are known and used by students who differ in intellectual ability and academic achievement. More specifically, an attempt was made to identify empirically validated learning strategies used by high achievement individuals. It was hoped that these identified strategies could then be used as an effective basis for the development of a learning strategy training program (see Dansereau, McDonald, Long, Actkinson, Ellis, Collins, Williams & Evans, 1975).

Although the main thrust of this research was to provide the prerequisites necessary for the development of a training program, the Learning Strategy Inventory was also constructed to be used more generally as an instrument for predicting academic achievement and diagnosing individual deficiencies in strategy knowledge and utilization.

Prior Approaches to the Development of Strategy Inventories

Responses to self-report inventories may be distorted by attempts to provide socially desirable responses, inappropriate interpretations of the items, lack of self awareness, etc. However, if care is taken in developing the inventory items and interpreting the subsequent results, the problems involved in identifying strategies in this way are overshadowed by the economy and efficiency associated with this approach.

Four major inventories dealing with learning techniques have been treated in the previous literature. These include: the Survey of Study Habits and Attitudes (SSHA) developed and revised by Brown & Holtzman (1953, 1966), the Study Behavior Questionnaire (SBQ) developed by Biggs (1970), the Study Strategy Questionnaire (SSQ) developed by Goldman & Warren (1973), and a more specific questionnaire on strategies employed in learning statistics developed by Goldman (1972).

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Generally, these inventories are composed of a potpourri of items. Thus, some deal with academic skills and techniques such as promptness in dealing with assignments, ability to deal with distractions, academic savvy, planfulness, clerical diligence, and note-taking; while others include items which deal with academic attitudes and beliefs, such as attitudes towards teaching methods and teachers, tolerance of ambiguity, dogmatism, and capacity for intrinsic motivation.

The results of studies with these inventories are encapsulated as follows (for a more detailed discussion of these questionnaires and their associated results consult Dansereau et al, 1975.)

- The inventory responses have negligible correlations with ability measures such as the Scholastic Aptitude Test.

- The correlations between inventory responses and grade point average range from about .30 to about .45.

- Multiple correlations involving inventory responses and aptitude scores afford better predictions of grades than either of the two measures separately.

- Art students respond differently to the inventory items than do Science students.

The results of work with these inventories have led some investigators to conclude that strategies associated with specific tasks may be more fundamental determinants of academic success than abilities, and that educators and researchers should seek the "most efficient" learning strategies for given academic tasks.

The major shortcoming of these previously published inventories is in their construction. Generally they have been based on intuitive notions about important academic behaviors. They have not taken into account the strategy-oriented cognitive psychology literature. The intuitive notion approach, besides lacking in content validity, has furnished items which are not

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sufficiently specific to allow for the prescription of training for students lacking in good academic techniques. The Learning Strategy Inventory (LSI) was constructed by the authors to provide a first step in remedying the shortcomings of previous inventories and to provide a basis for identifying effective and trainable learning strategies.

The Structure of the Learning Strategy Inventory

The Learning Strategy Inventory is composed of 201 multiple choice items (see Appendix A). Some of these items have been derived from previous questionnaires for purposes of comparison with prior results, some are autobiographical in nature, and many are derived from empirical results appearing in the psychological and educational literature. In this latter category, the items generally describe a typical academic task or component of a task, and ask the student to indicate which strategy he uses most frequently in dealing with such a task.

Although no attempt was made to create formal subscales due to the overlapping nature of many of the items, we can informally sub-divide the items into the following categories:

autobiographical
academic self reliance
cognitive stamina
memory processes
imagery processes
general reading skills
reading flexibility
mathemagenic behaviors
creativity
problem solving
cognitive styles
decision making
organizational skills
general study skills
study habits
test taking skills
note-taking and classroom behavior
media preference
distractability
integrative skills.

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These categories are presented merely to give the reader a flavor of the inventory; subsequent factor analyses will lead to more formal specifications.

Administration of the Learning Strategy Inventory

Following a test run on a limited number of subjects, the inventory was administered to 240 undergraduate students at the Texas Christian University (40 males and 200 females). These students, who were primarily freshmen and sophomores, were recruited from the Texas Christian University Harris School of Nursing and the General Psychology course. Time to complete the inventory generally ranged from 45 to 75 minutes. Following completion, a subset of participants were informally interviewed about their reaction to the inventory items.

Student Reactions to the Inventory

The vast majority of students reacted very favorably to the inventory. This is in marked contrast to the common expression of negative feelings following psychological experiments. The students felt that many of the inventory items either provided a twist to learning that they had not previously considered or renewed their acquaintance with strategies that they had forgotten. Many felt that the new awareness brought about by responding to the inventory would stimulate them to modify their study techniques. This student reaction brings up the possibility that the inventory, besides being useful for prediction, diagnosis of learning difficulties, and prescription of training, might be useful in stimulating students to revise and improve their learning strategies. The test of this possibility should receive attention in future work.

Analysis of the Learning Strategy Inventory Responses

This section of the report will discuss both the correlational analysis that was used to partially determine the components of the subsequent training program (again, see Dansereau, et al, 1975),

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and the factor analysis that was done in parallel with the development and testing of this program.

The Correlational Analysis

The product-moment correlations of responses to each inventory item with overall grade point average and the verbal and math portions of the Scholastic Aptitude Test are presented along with the items in Appendix A. Also provided in Appendix A are the number of individuals involved in the calculation of these coefficients (these vary due to missing data) and the presence or absence of statistical significance ($p < .05$) for each correlation.

The intent of this analysis is to identify items that are related to potentially trainable strategies, and that have consequential correlations with grade point average. Even better would be items that meet the above criteria and also appear to be independent of the verbal and math aptitude measures. These items would presumably reflect effective strategies that could be used by both high and low aptitude students (unfortunately this situation occurs only rarely in the present data).

Items supporting the potential need for strategy training in four aspects of the academic learning process have been identified. These aspects are as follows: identification of important and unfamiliar material, application of techniques for the comprehension and retention of the identified material, efficient retrieval of the information under appropriate circumstances, and effective coping with internal and external distractions while the above processes are occurring. The items which relate to the above aspects are presented in Tables 1 through 4. In all cases, high grade point average individuals perceive themselves as being more proficient at the indicated learning activity than do low grade point average individuals.

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TABLE 1

Items Relating to the Ability to Identify

Important and Difficult Material

Item **	Correlations With			Comments
	GPA	SATV	SATM	
63. I make judgments about the difficulty of what I am reading and then adjust my reading rate accordingly a. almost always b. most of the time c. some of the time d. almost never	-.162*	-.204*	-.135	
64. While reading, when I come to material that is familiar I tend to skip over it a. almost always b. most of the time c. some of the time d. almost never	-.147*	-.259*	-.318*	

*indicates correlation is significant at least at the .05 level
**all items were scaled in the following manner: a = 1, b =2, c=3, d=4.

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TABLE 1 (Continued)

Item**	Correlations With			Comments
	GPA	SATV	SATM	
66. When I go from a difficult to an easy passage my reading speed automatically increases a. almost always b. most of the time c. some of the time d. almost never	-.124*	-.282*	-.243*	
117. When studying for an exam one of the first things I do is to try to arrange things in some logical order, such as, by dates, class, from least to most, etc. a. almost always b. most of the time c. some of the time d. almost never	-.178*	-.021	-.036	Use of this technique probably indicates that an individual has good "categorizing" skills.

*indicates correlation is significant at least at the .05 level
**all items were scaled in the following manner: a=1, b=2, c=3, d=4.

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Table 1 (Continued)

Item**	Correlations With			Comments
	GPA	SATV	SATM	
122. When I am doing assigned work I study the difficult material first and leave the easier material for later a. almost always b. most of the time c. some of the time d. almost never	-.116*	.016*	.008	Would indicate better student can identify hard vs. easy material.

*indicates correlation is significant at least at the .05 level
**all items were scaled in the following manner: a=1, b=2, c=3, d=4.

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TABLE 2

Items Relating to the Utilization of Effective

Comprehension and Retention Techniques

Item**	Correlations With			Comments
	GPA	SATV	SATM	
33. I find myself memorizing rules, definitions, formulas, etc. without understanding them: a. almost always b. most of the time c. some of the time d. almost never	.296*	.235*	.220*	Reflects the notion that poorer students use ineffective comprehension strategies.
75. When reading do you consciously try to relate the material to other things that you know? a. almost always b. most of the time c. some of the time d. almost never	-.125*	.042	-.017	Reflects the notion that better students tend to form connections to new material.

* indicates correlation is significant at least at the .05 level
**all items were scaled in the following manner: a = 1; b = 2, c = 3, d = 4.

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Table 2 (Continued)

Item**	Correlations With GPA	SATV	SATM	Comments
110. In comparison to the amount of time spent reading your notes and the textbooks, how much time do you spend testing yourself on the material when studying for an exam? a. a large amount of time b. a moderate amount of time c. a small amount of time d. generally not at all	-.196*	.130	.037	
171. You have read some material for a course, and you feel that you understood pretty much what was being said. A classmate then asks you a question on the material or you try to recall some of the material yourself and find that you can't remember much of what you have read. How often does this happen to you? a. very frequently b. frequently c. sometimes d. almost never	.339*	.242*	.177	

* indicates correlation is significant at least at the .05 level
**all items were scaled in the following manner: a = 1, b = 2, c = 3, d = 4.

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Table 2 (Continued)

Item**	Correlations With: GPA	SATV	SATM	Comments
172. You are reading some course material and are not understanding it, but you keep going anyway in order to finish the reading assignment. How often do you do this? a. very frequently b. frequently c. sometimes d. almost never	.185*	.175*	.134	
173. You are reading some course material and are not understanding it so you go back over the material until you do. How often do you do this? a. very frequently b. frequently c. sometimes d. almost never	.147*	.008	.006	

* indicates correlation is significant at least at the .05 level
**all items were scaled in the following manner: a = 1, b = 2, c = 3, d = 4.

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Table 2 (Continued)

Item**	Correlations With: GPA	SATV	SATM	Comments
180. You are reading a course assignment and find that the material actually relates to something that you are interested in. How often does this happen? a. very frequently b. frequently c. sometimes d. almost never	-.334*	-.148	-.197*	Probably a prerequisite for forming connections to other material in memory.
188. I like to build on my own previous understanding of the material with the new information presented in class a. almost always b. most of the time c. some of the time d. almost never	-.276*	-.211*	-.146	

* indicates correlation is significant at least at the .05 level
**all items were scaled in the following manner: a = 1, b = 2, c = 3, d = 4.

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Table 2 (Continued)

Item**	Correlations With: GPA	SATV	SATM	Comments
190. I often memorize material without understanding it a. almost always b. most of the time c. some of the time d. almost never	.210*	.289*	.253*	
191. I try to find personal relevance in lecture material and reading material so I will be better able to remember it a. almost always b. most of the time c. some of the time d. almost never	-.198*	-.076	-.056	

* indicates correlation is significant at least at the .05 level

**all items were scaled in the following manner: a = 1, b = 2, c = 3, d = 4.

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TABLE 3

Items Related to Retrieval Abilities

Item **	Correlations With			Comments
	GPA	SATV	SATM	
174. You are taking a test and you come to a question for which you are sure you know the answer, but you just can't quite remember it. How often does this happen? a. very frequently b. frequently c. sometimes d. almost never	.248*	.218*	.199*	Indicates poorer students have difficulties in retrieval.
184. When taking an exam I am usually: a. very nervous and uptight b. somewhat nervous and uptight c. relatively relaxed d. very relaxed	.176*	.374*	.252*	Among other things, this item may reflect the stress involved with poor retrieval skills.

*indicates correlation is significant at least at the .05 level
**all items were scaled in the following manner: a=1, b=2, c=3, d=4.

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TABLE 4

Items Relating to the Ability to Cope With

Internal and External Distractions

Item **	Correlations With			Comments
	GPA	SATV	SATM	
16. Ability to concentrate (compared to other students): a. well above average b. above average c. below average d. far below average	-.380*	-.367*	-.367*	
45. Once I get started I find it easy to continue studying for a relatively long time a. almost always b. most of the time c. some of the time d. almost never	-.182*	-.001	-.042	Perseverance in studying is probably directly related to the ability to concentrate.

*indicates correlation is significant at least at the .05 level

**all items were scaled in the following manner: a=1, b=2, c=3, d=4.

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Table 4 (Continued)

Item **	Correlations With			Comments
	GPA	SATV	SATM	
132. I have a lot of trouble concentrating (that is, I can only study for a very short time before I start daydreaming, etc.) a. almost always b. most of the time c. some of the time d. almost never	.290*	.107	.147	
170. You are studying a textbook. After reading a number of paragraphs you suddenly realize you have no idea what you have just read because you have been thinking of other things. How often does this happen to you? a. very frequently b. frequently c. sometimes d. almost never	.261*	.225*	.167	

*indicates correlacion is significant at least at the .05 level
**all items were scaled in the following manner: a=1, b=2, c=3, d=4.

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Table 4 (Continued)

Item **	Correlations With			Comments
	GPA	SATV	SATM	
176. I find that during lectures I think of other things and don't really listen to what is being said. a. very frequently b. frequently c. sometimes d. almost never	.142*	.261*	.146*	

*indicates correlation is significant at least at the .05 level
**all items were scaled in the following manner: a=1, b=2, c=3, d=4.

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The support for the notions presented in Tables 1 through 4 may appear weak because of the low correlations; however, there are a few things to keep in mind. First, the restricted range of the response alternatives (only four possible responses per item) severely limits the magnitude of the correlations. Second, the Scholastic Aptitude measures which have a much greater range of scores correlate with grade point average only at a level of about .45. Third, item correlations for previous inventories have been similar to if not lower than those reported in the tables. It was therefore concluded that there was sufficient evidence to explore the possibility of developing training procedures for the four phases of the learning process. This seemed especially true for the second aspect of the process (shown in Table 2): the utilization of effective comprehension and retention techniques.

When reviewing all the item correlations (Appendix A) the reader may note many additional significant correlations. However, the items involved in these correlations did not appear to imply an obvious training manipulation. Even though these items do not seem to have direct diagnosis and prescription properties, they may be useful in terms of predicting effective academic performance.

The Factor Analysis

The following steps were employed in carrying out the factor analysis.

1. On the basis of their low correlations with grade point average (GPA), Scholastic Aptitude Test: Verbal (SATV), and Scholastic Aptitude Test: Math (SATM), 51 items were eliminated from further consideration.

2. The remaining 150 items were split into two equal sets by assigning every other item to one of the two groups. This was done to check on our original

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categorizations of the items and to keep our data within the bounds of the available computer programs.

3. A truncated principal components factor analysis (Gorsuch, 1974) was performed on each set of 75 items separately (and only factors with eigenvalues ≥ 1 were accepted).

4. It was found that the biographical items accounted for the greatest amount of variance in the matrices. Since these items were not of primary interest, the 26 biographical items were eliminated from further consideration.

5. Again, truncated principal component factor analyses were carried out on both sets of 62 items (and only factors with eigenvalues ≥ 1 were accepted).

6. These analyses resulted in 22 factors for one set of items and 23 for the other.

7. The principal components solutions were submitted to the varimax rotation procedure (Gorsuch, 1974) and orthogonal factors were extracted.

8. A factor score was then calculated for each individual respondent on all 45 factors.

9. These factor scores were then intercorrelated and correlated with GPA, SATV, and SATM.

Generally, the two sets of factors were not highly interrelated. Only a few of the correlations between the factors derived from the two sets of inventory items were above .20, and only one was greater than .35. Therefore, all 45 factors were substantially independent of one another. This confirms our original suspicion that the rough categories of items we a priorily created were far from homogeneous. If they were homogeneous one would expect that some of the factors derived from one half of the inventory items would be highly correlated with some of the factors derived from the other half since items from the same a priori categories appeared in both halves. However,

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even these low correlations among factors should provide substantial guidance in creating more valid sub-scales for future work with the inventory.

The items loading on the eight factors that correlated .16 or greater with grade point average (.16 was chosen as a threshold because an inspection of the factors correlating significantly with GPA indicated that those correlating below .16 were too heterogeneous to allow for even minimal interpretation) are presented in Appendix B. Also presented are the descriptions of the factors, their correlations with GPA, SATV, and SATM, and the loadings of the items on each factor. Finally, a set of intercorrelations among the factors follows the individual factor data.

The factors contained in Appendix B appear to provide support for three of the four phases of the learning process discussed in the previous section on results of the inventory correlation analysis. Differential attention to the identification phase by good and poor students seems to be partially reflected in Factor 19. The differential use of effective comprehension and retention techniques appears to be suggested by Factor 33. Finally, the importance of coping with internal and external distractions is reflected in Factor 17. The only learning phase not reflected in the factor analysis is that of retrieval. This is probably due to the paucity of items potentially tapping this phase. This lack of retrieval items should be remedied in further work with the inventory.

Discussion of the Learning Strategy Inventory Results

One purpose for developing and using the Learning Strategy Inventory was to provide a basis for identifying learning strategies that could be effectively incorporated into a subsequent training program. Four aspects of the learning process were identified as potential areas for strategy development. This

information, combined with the selection of effective strategies identified in the recent psychological and educational literature, has provided a basis for the creation of a learning strategy training program (see Dansereau and others, 1975). However, at its present level of development the Inventory does not appear to be an adequate instrument for diagnosing an individual's learning strategy difficulties. Even though, it has more potential for filling this role than do prior inventories due to the inclusion of items dealing with experimentally validated strategies.

The major problems arising from our present research with the inventory appear to be as follows. In general, the magnitudes of the item and factor score correlations with the criteria (GPA, SATV, SATM) are not sufficient for accurate diagnostic work; many strategy based items did not correlate at all with the criteria, and the factors extracted by the analytic techniques are not sufficiently homogeneous.

Although the magnitude of many of the item and factor score correlations with the criteria are as high as those reported by researchers working with previous inventories, and are probably sufficient to warrant their use in an academic achievement prediction system, they do not appear to be adequate for diagnosis. One reason may be the relative insensitivity of the main criteria, grade point average. The mean GPA for the students completing the inventory was 2.8 with a variance of only 0.41. Combine this with the limited number of item response alternatives and the effective range of the correlations is severely limited. Even if GPA had greater variance, this measure is only moderately related to pure learning ability (the ability which would be the target of a diagnostic instrument of the type being discussed). This confounding of learning ability with motivation, personality, socio-economic situation, etc. in a complex measure like GPA limits the amount of variance that can be accounted for by items reflecting differential utilization of learning strategies. In future work with the Inventory it is clear that purer

criteria must be developed, that is, measures reflecting pure learning in academic-like tasks.

Another factor limiting the magnitude of the correlations with the criteria is the nature of the subject sample used in the experimentation. The great majority of the students exposed to the inventory were female freshmen and sophomores. Since there may be male-female differences in strategy knowledge and utilization, and since there are male-female differences in GPA at Texas Christian University, the restricted sample probably limited the correlations. Also, overall GPA is probably not as reflective of academic achievement in freshmen and sophomores as with upper-classmen. Future experiments using the inventory will require a more diverse sampling of students.

The low correlations of some items with the criteria, especially those involving items reflecting strategy utilization, may be caused by a lack of strategy diversification among students, a lack of self awareness, low interpretability of some of the items, or, a combination of these factors. First, the assumption that better learners are aware of and employ more effective strategies than poorer learners may not be correct. Better learners, as defined by GPA, may have greater academic aptitude, but may not necessarily be more strategic in dealings with educational material. Therefore, it may be true that good and poor learners are not differentially knowledgable about learning strategies and that both could benefit from the teaching of more effective techniques. This state of affairs would shift the emphasis from comparing a student's responses to that of a good student's, to a comparison with experimentally derived notions of effective strategies.

Assuming there is at least some differential utilization of strategies among students (not necessarily the good-poor dichotomy), then difficulties in assessing that utilization lie with the student's self-awareness and the interpretability of the items. This latter issue is the one that probably requires the most effort if the Learning Strategy Inventory is to be a successful diagnostic device. Detailed analyses of the reactions to the readability of each item need to be developed.

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Further, new items which converge on important strategies must be constructed to homogenize our sub-scales. Providing a number of items converging on the same concept should improve interpretability.

Results, Conclusions, and Recommendations

In summary, our research with the empirically based Learning Strategy Inventory has allowed us to identify four phases of the learning process which can be fruitfully incorporated in a strategy training program: (a) identification of important and unfamiliar material, (b) application of techniques for the comprehension and retention of the identified material, (c) efficient retrieval of information under appropriate circumstances, and (d) effective coping with internal and external distractions while the above processes are occurring. High achievement students, as compared with low achievement students, indicated a greater utilization of effective strategies in each of these four phases. The results of an evaluation of the training program resulting from an integration of these strategies is presented in Dansereau and others, 1975.

In addition to providing an effective basis for strategy training development, the work with the Learning Strategy Inventory has also provided a significant first step in the development of a more general instrument for predicting academic performance and diagnosing learning strategy inadequacies. Ultimately this instrument may serve as the foundation for individual prescription of strategy training and prescription of effective teaching methods.

Our specific recommendations for achieving this goal would encompass the following.

1. Elimination of items that are uncorrelated with the criteria.

2. Development of new items that converge on

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strategies identified in the present research.

3. Assessment of the readability of each item.

4. Construction of a criterion that directly measures learning ability.

5. Administration of the Inventory and criterion measures to a heterogeneous sample of students.

After the specific recommendations have been followed subsequent factor analyses of the results would then aid in the identification of key diagnostic sub-scales.

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APPENDIX A

Learning Strategies Inventory and Correlations

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LEARNING STRATEGY INVENTORY: INSTRUCTIONS

We are attempting to find out how students listen to lectures, write term papers, read textbooks, and prepare for and take exams.

Please answer each question on the following questionnaire in terms of what methods you actually use and not in terms of what you think or know are the "best" methods. A truthful answer is important. Based on the information you give us a program will be developed to teach the most efficient ways to study, that is, learn more in less time. Both good and poor students will be involved in this training program during the coming summer and fall and you will very likely be given a chance to participate.

Let me again stress, how well that program will work is dependent to a large extent on whether you "tell it like it is."

Although we are asking that you put your name on the questionnaire you can be assured that this information will be used only for the purposes of developing a study training program and will not be given to any instructor or school officials. Please answer each item as accurately as you can. If there is any question which you feel would be impossible to answer accurately, please raise you hand.

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Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
1.	On the average how many hours per week do you spend in study activities outside of class? a. less than 8 hours b. 9-16 hours c. 17-24 hours d. more than 25 hours	.328*	.183*	.108
2.	On the average how many hours a week do you spend in organizational activities such as a church group, clubs, fraternity, sorority, etc.? a. 8 hours or less b. 9-16 hours c. 17-24 hours d. 25 hours or more	-.057	-.063	-.050
3.	How much time a week do you usually spend working on a job outside of school? a. none b. 5-10 hours c. 11-20 hours d. 21-40 hours	-.152*	.003	.001

*Indicates that the correlation is significant at least at the .05 level.

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Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
4.	How many hours per week do you spend in class? a. 6 hours or less b. 7-12 hours c. 13-18 hours d. 19 hours or more	.219*	-.028	.028
5.	How much sleep do you average a night? a. 6 hours or less b. 7-8 hours c. 9-10 hours d. 11 or more	.066	.176*	.116
6.	How much time a day do you spend in physical activities such as sports, tennis, jogging, etc: a. less than 1 hour b. 1-2 hours c. 2-3 hours d. more than 3 hours	-.139*	-.236*	-.123
7.	How confident are you in rating yourself on these questions in comparison to other students? a. very confident b. confident c. somewhat unsure d. not very confident at all	-.248*	-.065	-.153

* Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
	On the following questions please compare yourself to your fellow students:			
8.	Time spent studying: a. well above average b. above average c. below average d. far below average	-.417*	-.165	-.088
9.	Intellectual ability: a. well above average b. above average c. below average d. far below average	-.393*	-.422*	-.302*
10.	Reading ability: a. well above average b. above average c. below average d. far below average	-.251*	-.503*	-.285*
11.	Personality (popularity/ likeability, etc.): a. well above average b. above average c. below average d. far below average	.093	.260*	.296*
12.	Ability to solve new or novel problems: a. well above average b. above average c. below average d. far below average	-.106	-.008	-.159

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
13.	Ability to organize my work: a. well above average b. above average c. below average d. far below average	-.318*	-.105	-.236*
14.	Ability to make decisions: a. well above average b. above average c. below average d. far below average	.030	.051	.001
15.	Motivation: a. well above average b. above average c. below average d. far below average	-.381*	-.006	-.089
16.	Ability to concentrate: a. well above average b. above average c. below average d. far below average	-.380*	-.367*	-.340*

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
	For the following questions tell us to what extent your decision to attend college was determined by (you are no longer to be comparing yourself to other students):			
17.	Parents: a. influenced it quite a lot b. influenced it some c. had a small influence d. had very little influence if any	-.007	-.090	-.040
18.	Friends: a. influenced it quite a bit b. influenced it some c. had a small influence d. had a very little influence if any	.044	-.121	.068
19.	Job opportunities: a. influenced it quite a bit b. influenced it some c. had a small influence d. had a very little influence if any	.003	.046	.040
20.	The social activities: a. influenced it quite a bit b. influenced it some c. had a small influence d. had very little influence if any	.084	.130	.032

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
21.	Because learning is interesting: a. influenced it quite a bit b. influenced it some c. had a small influence d. had very little influence if any	-.252*	-.127	.078
	What grade would you expect to make in most courses that are known to be:			
22.	Difficult: a. "A" b. "B" c. "C" d. "D" e. "F"	-.685*	-.341*	-.332*
23.	Easy: a. "A" b. "B" c. "C" d. "D" e. "F"	-.441*	-.139	-.266*
24.	What grade would you expect to make in most courses in your major? a. "A" b. "B" c. "C" d. "D" e. "F"	-.508*	-.395*	+.381*

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
25.	How much do you change your study habits from course to course? a. dramatically b. somewhat c. very little d. not at all	-.057	-.264*	-.337*
26.	What grade would you expect to make in most required courses not in your major? a. "A" b. "B" c. "C" d. "D" e. "F"	-.598*	-.332*	-.375*
27.	Would you be willing to participate in a program to improve your study skills? a. yes b. maybe c. no	.140*	.284*	.331*
28.	When I compare my vocabulary to other students at my grade level, I feel my vocabulary is: a. below their level b. at the same level c. above their level	.251*	.476*	.231*

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
29.	When I compare my vocabulary to my instructors, my vocabulary is: a. below their level b. at the same level c. above their level	.082	.237*	.175*
30.	If I could choose how my class time could be spent I would prefer having discussions between students and the teacher: a. almost always b. most of the time c. some of the time d. almost never	.042	.036	.051
31.	I have difficulty understanding what my instructors are saying: a. almost always b. most of the time c. some of the time d. almost never	.274*	.417*	.203*
32.	My instructors generally present lecture material: a. too fast for me to keep up b. somewhat rapidly, but I can usually understand c. somewhat slowly, but fast enough so I am not bored d. too slow to keep my attention	.293*	.231*	.276*

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
33.	I find myself memorizing rules, definitions, formulas, etc. without understanding them: a. almost always b. most of the time c. some of the time d. almost never	.296*	.235*	.220*
34.	If I could choose how my class time could be spent I would prefer having lectures: a. almost always b. most of the time c. some of the time d. almost never	-.060	-.049	.026
35.	Do you question the authors' position as you're reading a text? a. almost always b. most of the time c. some of the time d. almost never	-.037	-.128	-.103
36.	I learn most of what I know about a course from the teacher a. almost always b. most of the time c. some of the time d. almost never	-.006	.008	.197*

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
37.	When studying material that I am interested in, my goal is to understand the material well enough to be able to explain it to someone else. a. almost always b. most of the time c. some of the time d. almost never	.016	.214*	.203*
38.	I prefer to study with others rather than alone a. almost always b. most of the time c. some of the time d. almost never	.117*	.191*	.140
39.	I perform better than others on tasks that are short and well defined as opposed to long and unstructured a. almost always b. most of the time c. some of the time d. almost never	-.010	-.114	-.127
40.	If there is something in a lecture that I don't understand I ask the teacher to explain it a. almost always b. most of the time c. some of the time d. almost never	-.241*	-.027	-.097

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
41.	If there is something in the book that I don't understand I ask the teacher to explain it a. almost always b. most of the time c. some of the time d. almost never	-.167*	.055	.049
42.	If there is something I don't understand in a lecture I am more likely to ask one of my friends or classmates to explain it rather than read my text and get the explanation from it a. almost always b. most of the time c. some of the time d. almost never	.190*	.203*	.099
43.	I prefer to work on a new problem that requires creative thinking a. just about always by myself b. most of the time by myself, once and a while with a few other people c. some of the time by myself, usually with a few other people d. just about always with a few other people	-.165*	-.192*	-.264*

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
44.	I work in spurts of two or three days of hard work followed by a couple of days off a. almost always b. most of the time c. some of the time d. almost never	.164*	.013	-.025
45.	Once I get started I find it easy to continue studying for a relatively long time a. almost always b. most of the time c. some of the time d. almost never	-.182*	-.001	-.042
46.	When studying an assignment for a course I go to other books that I am familiar with and look up that topic a. almost always b. most of the time c. some of the time d. almost never	.060	.185*	.134
47.	If I were trying to memorize a 12 word list of points to be sure to make in a speech, I would spend the most time on a. items 1-3 b. items 4-5 c. items 7-8 d. items 10-12	.106	-.026	-.048

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
48.	If I were going to rapidly read you a list of 12 familiar words; approximately how many do you think you would be able to correctly write down following the presentation a. 1-3 b. 4-6 c. 7-9 d. 10-12	.066	-.044	-.007
49.	When the class instructor says "this material will not be on the exam" I consciously try to forget the material a. almost always b. most of the time c. some of the time d. almost never	.251*	.195*	.039
50.	In trying to memorize items (such as a grocery list) I repeat items over and over to myself until I feel I can remember them a. almost always b. most of the time c. some of the time d. almost never	-.024	-.063	.079

*Indicates that the correlation is significant at least at the .05 level.

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Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
51.	How often do you have occasion to memorize lists a. frequently b. very frequently c. occasionally d. almost never	-.084	-.049	.001
52.	When studying a text I make frequent tests of my recall a. almost always b. most of the time c. some of the time d. almost never	-.070	.085	.188*
53.	In trying to learn and remember I try to group similar items together (such as milk, butter and eggs) in order to make the memorization easier a. almost always b. most of the time c. some of the time d. almost never	-.093	.014	0
54.	When having difficulty recalling something, I make an effort to recall things that might be related to it a. almost always b. most of the time c. some of the time d. almost never	-.099	-.023	-.136

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
55.	In trying to learn and remember things, such as the agricultural products of Brazil, I try to see how the words are related and attempt to form a rhyme or story using the words a. almost always b. most of the time c. some of the time d. almost never	-.011	.130	.122
56.	If in an experiment you were given 5 chances to memorize 20 numbers which were projected on the screen for 5 seconds, how many numbers would you try to memorize each trial a. 1-5 b. 6-10 c. 11-15 d. all 20 Read the following passage, study it for a short time as you would if you were going to be tested, then turn to the next page. The Prickles and Fantasias are two flowers that grow near the Uganda River, Prickles have short stems and red flowers. They can be contrasted with Fantasias which have long stems and orange flowers. Scientists have determined that all short stemmed flowers in this area have deep roots. Flowers with longer stems all seem to have shallow roots.	-.125*	-.184*	-.185*

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
	The flowers with deep roots are able to stay in the soil. The flowers with shallow roots are being washed away.			
57.	When reading the passage on the previous page I a. formed a vivid picture of the material without effort b. worked at forming a vivid picture of the material c. worked at forming a vivid picture of the material but failed d. did not try to form a vivid picture of the material.	.055	.045	.198*
58.	When you close your eyes and try to imagine what the flower Fantasia looks like, how vividly can you imagine it? a. very clear, comparable in vividness to the actual experience of seeing a flower b. moderately clear and vivid, recognizable c. vague and dim d. no image present at all, you only know that you are thinking of it	.000	.146	.204*

*Indicates that the correlation is significant at least at the .05 level.

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Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
59.	When you close your eyes and try to imagine the red color of the Prickle (not the flower itself) how vividly can you imagine it? a. very clear, comparable in vividness to the actual experience of seeing a flower b. moderately clear and vivid, recognizable c. vague and dim d. no image present at all, you only know that you are thinking of it	.074	-.059	.167 *
60.	I find I have a good memory for pictures a. almost always b. most of the time c. some of the time d. almost never	.003	-.029	.193*
61.	In trying to learn and remember things I try to visualize the items and then put them together in a scene. a. almost always b. most of the time c. some of the time d. almost never	.103	.164	.239*

* Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
62.	While studying, do you try to picture in your mind the material you are reading? a. almost always b. most of the time c. some of the time d. almost never	.088	-.046	.054
63.	I make judgments about the difficulty of what I am reading and then adjust my reading rate accordingly a. almost always b. most of the time c. some of the time d. almost never	-.162*	-.204*	.135
64.	While reading, when I come to material that is familiar, I tend to skip over it a. almost always b. most of the time c. some of the time d. almost never	-.147*	-.259*	-.318*
65.	While reading, when I come to material that is familiar I continue on at the same speed so I don't miss any of the ideas a. almost always b. most of the time c. some of the time d. almost never	.063	.213*	.186*

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
66.	When I go from a difficult to an easy passage my reading speed automatically increases a. almost always b. most of the time c. some of the time d. almost never	-.124*	-.282*	-.243*
67.	I tend to read different kinds of reading materials (for example an article in a newspaper versus a chapter in a textbook) at different rates a. almost always b. most of the time c. some of the time d. almost never	-.094	-.114	-.040
68.	When I read material that I am interested in I try to remember the main ideas instead of specific facts a. almost always b. most of the time c. some of the time d. almost never	-.135*	-.070	.049
69.	Do you try to come up with questions that might be answered in a chapter before reading it? a. almost always b. most of the time c. some of the time d. almost never	-.022	.117	.200*

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
70.	When studying for an exam I find myself looking quickly through the textbook for specific information a. almost always b. most of the time c. some of the time d. almost never	.161*	.238*	.095
71.	I pass quickly through an entire passage to get the general idea of what the entire passage is about before I read at a detailed level a. almost always b. most of the time c. some of the time d. almost never	-.113*	.137	.005
72.	I learn most of what I know about a course from reading the textbook a. almost always b. most of the time c. some of the time d. almost never	.156*	.080	.045
73.	My reading assignments are hard to understand a. almost always b. most of the time c. some of the time d. almost never	.180*	.272*	.226*

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
74.	I feel I am reading as fast as I can a. almost always b. most of the time c. some of the time d. almost never	-.025	-.180*	-.056
75.	When reading do you consciously try to relate the material to other things that you know? a. almost always b. most of the time c. some of the time d. almost never	-.125*	.042	-.017
76.	I stop while reading and mentally go over or review what was said a. almost always b. most of the time c. some of the time d. almost never	-.089	-.012	-.063
77.	While reading I often stop and try to relate the material read to what I have learned previously a. almost always b. most of the time c. some of the time d. almost never	-.076	.128	.131

*Indicates that the correlation is significant at least at the .05 level.

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Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
78.	If I were given the plot of a movie and then asked to think of an appropriate and "catchy" title I would a. Put down the first reasonably good title that came to mind b. Spend a lot of time thinking about the best title and then write it down c. First write down as many titles as I could think of without worrying about how good they were and then choose the best one d. First think of all the ideas that were associated with the plot, then write down a number of titles and finally choose the best one	.022	-.014	-.033
79.	If I did come up with a title for the movie I would know whether it was good or not a. almost always b. most of the time c. some of the time d. almost never	-.080	-.129	-.146

*Indicates that the correlation is significant at least at the .05 level.

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Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
80.	If I were shown a cartoon and asked to think of a caption for it that was both appropriate and clever I would a. Put down the first reasonably clever caption I could think of b. Spend a lot of time thinking about a good caption and then write it down c. Jot down ideas about the cartoon and then try to formulate the caption from these ideas d. Think of all the captions this cartoon brings to mind, write them down, and then choose the best one	.073	-.204*	-.159
81.	I'm not sure whether my ideas are worthwhile or not until they have been criticized by a teacher or another person a. almost always b. most of the time c. some of the time d. almost never	.138*	.237*	.173*

*Indicates that the correlation is significant at least at the .05 level.

00061

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
82.	I can judge my own work fairly objectively a. almost always b. most of the time c. some of the time d. almost never	-.147*	-.193*	-.220*
83.	If given a choice I prefer to work on an exam problem that has no set solution so that I can generate novel ideas a. just about always b. most of the time c. some of the time d. almost never	-.001	.063	.088
84.	Which of the following would you prefer to be able to do? a. quote from an almanac or book of world records b. recite a passage from a novel or play you enjoyed c. give a report of a book you have recently read d. critically review a recent textbook you have read	.051	.051	.132
85.	When given a complicated problem I have a very difficult time discovering exactly what is being asked: a. just about always b. most of the time c. some of the time d. almost never	.187*	.294*	.145

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
86.	If I were given this problem on an examination: "the price of a $500 camera is reduced by 10%. That price is again reduced by 20%. What, in dollars, is the total discount?" I would first: a. make some calculations that seem appropriate b. try to remember a formula that I have used on similar problems c. try to work it out in my head d. try to determine exactly what is being asked	-.097	.013	-.028
87.	I prefer to work on an exam problem that has a "right" solution thereby guaranteeing that if I work on it long enough I can produce the correct answer: a. just about always b. most of the time c. some of the time d. almost never	-.073	.003	-.058
88.	Over which type of material do you generally prefer to be tested? a. specific facts b. general concepts c. relationships between facts and concepts d. theories	.211*	.205*	.133

*Indicates that the correlation is significant at least at the .05 level.

00063

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
89.	If there are a number of steps in solving a problem do you check to see if each step is correct before going on? a. almost always b. most of the time c. some of the time d. almost never	-.137*	.110	.043
90.	In solving a mathematics problem do you have a hard time deciding what procedure to use? a. almost always b. most of the time c. some of the time d. almost never	.171*	.216*	.435*
91.	I tend to memorize facts because I believe grades are based more on the ability to memorize facts than on a person's ability to "comprehend" or understand the material a. almost always b. most of the time c. some of the time d. almost never	.087	.042	.206*

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
92.	Assume you are enrolled in a political science course. The following are examples of the types of materials you must learn. Which type of material would you most prefer to be tested on? a. the names of all the Supreme Court justices and when they served b. the day to day operations of the Supreme Court c. the effects that Supreme Court rulings have had on the American legal system d. theories about the impact of selection of Supreme Court justices	.156*	.112	.134
93.	Which of the following would you most like to be able to do a. draw a map of Europe b. name all the capitals of the countries of the world c. give the developments which contribute to the selection of one city over another for the capital of a country d. discuss the impact on its population of a city being chosen as a capital of a country	.119*	-.001	-.011

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
94.	Assume you are enrolled in a natural science course. The following are examples of the types of materials you must learn. Which type of material would you most prefer to be tested on? a. the lengths of the largest ships in the world b. the latitude and longitude of the fifty most important cities in the world c. the factors responsible for westward migration in the United States d. theories of continental drift	.199*	.103	.046
95.	Assume you are enrolled in a course in Russian History. The following are examples of the types of materials you must learn. Which type of material would you most prefer to be tested on? a. the results of the battle of Stalingrad b. the names and contributions of the Russian Czars c. the factors responsible for the fall of Czarist regime d. theories about the course of Russian population growth	-.058	-.003	-.042

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
96.	Given a novel problem I guess a number of probable answers and test each one a. almost always b. most of the time c. some of the time d. almost never	.081	.006	-.086
97.	I make my own decisions without advice from other people a. almost always b. most of the time c. some of the time d. almost never	.090	.101	.140
98.	I ask other people about a decision and then usually do what they suggest a. almost always b. most of the time c. some of the time d. almost never	.023	-.082	-.166*

Item No.	Item	Correlations With GPA (N= 193)	SATV (N=104)	SATM (N=104)
99.	In making relatively unimportant decisions (for example, deciding on a move in a friendly game of chess, deciding where to eat, deciding when to study) how much information do you generally try to gather before deciding? a. Not much at all, I generally rely on my intuition b. Quite a bit, but I'm not very systematic about it c. Quite a bit and I do it in a systematic fashion d. I try to cover almost every possibility in a systematic way	.005	-.073	.028
100.	I ask other people about a decision but generally make up my own mind a. almost always b. most of the time c. some of the time d. almost never	.035	-.011	-.024
101.	In searching for something that I have misplaced I search systematically and very rarely look in the same place twice a. almost always b. most of the time c. some of the time d. almost never	-.011	-.071	-.099

*Indicates that the correlation is significant at least at the .05 level.

00068

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
102.	In searching for something that I have misplaced I search unsystematically and look in the same places a number of times a. almost always b. most of the time c. some of the time d. almost never	.095	.047	.007
103.	In making decisions I try to systematically write down all of the information relevant to the decision a. almost always b. most of the time c. some of the time d. almost never	-.050	.046	-.004
104.	After finding out that I have made a poor decision I usually review how I made my decision to see where I went wrong a. almost always b. most of the time c. some of the time d. almost never	-.039	.066	.127
105.	Given a new or novel problem I wait until I can say for sure what the answer is a. almost always b. most of the time c. some of the time d. almost never	.080	-.015	-.012

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
106.	In making important decisions (for example, choosing a college or choosing a major) how much information do you generally try to gather before deciding? a. Not much at all, I generally rely on my intuition. b. Quite a bit, but I'm not very systematic about it. c. Quite a bit and I do it in a systematic fashion. d. I try to cover almost every possibility in a systematic way.	.175*	-.013	.085
107.	In making moderately important decisions (for example, selecting a course, or making a fairly large purchase) how much information do you generally try to gather before deciding? a. Not much at all, I generally rely on my intuition. b. Quite a bit, but I'm not very systematic about it. c. Quite a bit and I do it in a systematic fashion. d. I try to cover almost every possibility in a systematic way.	.013	.074	.094

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
108.	In making decisions I usually jot down some notes to remind me about information relevant to the decision a. almost always b. most of the time c. some of the time d. almost never	.048	.114	.089
109.	If you have assignments in three subjects do you usually complete one assignment before starting on the next one (as opposed to doing a little bit on each one) a. almost always b. most of the time c. some of the time d. almost never	-.088	-.003	.004
110.	In comparison to the amount of time spent reading your notes and the textbooks, how much time do you spend testing yourself on the material when studying for an exam? a. a large amount of time b. a moderate amount of time c. a small amount of time d. generally not at all	-.196*	.130	.037
111.	Out side of school I make notes to myself so I don't forget important dates. a. very frequently b. frequently c. sometimes d. almost never	-.087	-.007	-.074

*Indicates that the correlation is significant at least at the .05 level.

00071

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
112.	In make it a point to rearrange my notes in a logical order at least once a week a. almost always b. most of the time c. some of the time d. almost never	-.062	.007	-.024
113.	In writing a term paper, I first make a fairly detailed outline of what I am going to say a. almost always b. most of the time c. some of the time d. almost never	.032	.045	.064
114.	I organize my materials, notes, etc. at the start of each study session so as to most effectively use my time a. almost always b. most of the time c. some of the time d. almost never	-.074	.085	.052
115.	If you were to test your recall of the material you're reading would you a. test your recall after every passage or small section of the book b. test yourself after several passages or a complete chapter of the book c. test yourself after a number of chapters have been completed d. I would not usually test myself at all	-.022	.222*	.152

*Indicates that the correlation is significant at least at the .05 level.

00072

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
116.	In writing a term paper, I make a "draft" before producing the final product a. almost always b. most of the time c. some of the time d. almost never	-.097	.024	.041
117.	When studying for an exam one of the first things I do is try to arrange things in some logical order, such as, by dates, class, from least to most, etc. a. almost always b. most of the time c. some of the time d. almost never	-.178*	-.021	-.036
118.	If there are passage headings in a text book do you stop and ask yourself what you might know about the passage before reading it? a. almost always b. most of the time c. some of the time d. almost never	-.013	.142	-.025
119.	Before an exam do you usually spend most of your time a. studying your notes b. reading the text material c. talking with other students about the exam d. testing yourself over the material	.060	-.051	.118

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
120.	Before starting any type of task (for example, a problem to be solved, a reading assignment, a term paper) do you usually spend a substantial amount of time trying to figure out the best way to do it? a. almost always b. most of the time c. some of the time d. almost never	.084	.090	-.077
121.	In studying I divide the material up into parts (units, chapters, etc.) and try to thoroughly learn one part before going on the another a. almost always b. most of the time c. some of the time d. almost never	-.067	.033	-.027
122.	When I am doing assigned work I study the difficult material first and leave the easier material for later a. almost always b. most of the time c. some of the time d. almost never	-.116*	.016	.008
123.	I usually check over my exam paper for errors before turning it in a. almost always b. most of the time c. some of the time d. almost never	-.241*	-.071	-.127

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
124.	If I don't understand an explanation given by the teacher or presented in my text I try to memorize the explanation so I will be able to answer test questions on that topic a. almost always b. most of the time c. some of the time d. almost never	.110*	.040	.174*
125.	When I have a difficult assignment I study the easier points first leaving the harder material for later a. almost always b. most of the time c. some of the time d. almost never	.155*	-.050	-.065
126.	I copy the examples the instructor writes on the blackboard a. almost always b. most of the time c. some of the time d. almost never	-.039	-.013	.031
127.	In studying for a test I try to figure out what will be on the test and then concentrate my studying on that material a. almost always b. most of the time c. some of the time d. almost never	.021	-.009	-.011

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
128.	Do you change your method of studying when you have done poorly on an exam? a. almost always b. most of the time c. some of the time d. almost never	-.008	-.115	-.052
129.	My studying is determined by the immediate demands of approaching classes a. almost always b. most of the time c. some of the time d. almost never	.000	-.221*	-.158
130.	I usually study at the same place a. almost always b. most of the time c. some of the time d. almost never	-.109	-.166*	-.140
131.	I find that it is easier for me to study after some leisure activity (sports, bull sessions, etc.) as opposed to having just finished class, just studied, etc. a. almost always b. most of the time c. some of the time d. almost never	.071	-.044	-.027

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
132.	I have a lot of trouble concentrating (that is, I can only study for a short time before I start daydreaming, etc.) a. almost always b. most of the time c. some of the time d. almost never	.290*	.147	.107
133.	When I am having difficulty concentrating on the material I a. tell myself to concentrate harder b. set up a short term goal, such as reading a paragraph or so, after which I reward myself in some way c. take a short break, get up and stretch, etc. d. quit studying	.096	.120	.078
134.	I study where there are few noises or distractions a. almost always b. most of the time c. some of the time d. almost never	.012	.000	.050
135.	Do you change your study habits according to the testing procedures employed a. almost always b. most of the time c. some of the time d. almost never	.004	-.207*	-.197*

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
136.	I find that it is easy for me to study immediately after a class a. almost always b. most of the time c. some of the time d. almost never	-.103	.044	.071
137.	How often is your study disturbed by interruptions, distractions, etc? a. Quite often; happens almost all the time b. 50% of the time c. Occasionally, perhaps 25% of the time d. Practically never	-.003	.033	-.136
138.	I budget my time in such a manner that I seldom find myself doing themes, reports or cramming for tests at the last minute a. almost always b. most of the time c. some of the time d. almost never	-.303*	-.013	.056
139.	I have a weekly study schedule and stick to it a. almost always b. most of the time c. some of the time d. almost never	-.151*	.003	-.144

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
140.	Every morning I plan the day's activities and then follow my schedule a. almost always b. most of the time c. some of the time d. almost never	-.204*	-.051	-.171*
141.	I feel like I don't accomplish very much in the amount of time I spend studying a. almost always b. most of the time c. some of the time d. almost never	.178*	.028	.007
142.	How long do you usually study at one time? a. 0-1/2 hour b. 1/2 - 1 hour c. 1 - 2 hours d. 3 hours or more	.202*	-.035	-.097
143.	I find that time seems to slip away from me during the day a. almost always b. most of the time c. some of the time d. almost never	.245*	.176*	-.044

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
144.	I find that I have a hard time getting started studying a. almost always b. most of the time c. some of the time d. almost never	.278*	-.157	.028
145.	When I "cram" for an exam I am just reviewing what I have already learned a. almost always b. most of the time c. some of the time d. almost never	-.203*	-.280*	-.165*
146.	I learn most of what I know about a course in "cramming" for exams a. almost always b. most of the time c. some of the time d. almost never	.089	.082	.039
147.	I often go back and change my answers on True-False and Multiple choice exams a. almost always b. most of the time c. some of the time d. almost never	.216*	.228*	.021

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
148.	In taking tests, writing themes, etc., I often find I have misunderstood what is wanted and lose points because of it a. almost always b. most of the time c. some of the time d. almost never	.379*	.284*	.224*
149.	In studying for a test a. I do very little review because I learned it as I went along b. I go back over key concepts to make sure they are fresh in my mind c. I review everything once and review more important material more than once d. I review everything from start to finish as many times as possible	-.023	-.181*	-.225*
150.	In taking a test do you go through and answer the questions you are sure of first and then go back to those you are less sure of a. almost always b. most of the time c. some of the time d. almost never	.029	-.100	.017
151.	When answering an essay question I a. start writing immediately b. think up a number of ideas before I start writing c. think up ideas and list them before I start writing d. think up ideas and put them in outline form before I start writing	.123*	-.130	-.120

*Indicates that the correlation is significant at least at the .05 level.

00081

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
152.	If you had a choice, which of the following types of exams would you prefer taking? a. multiple choice or true-false b. fill in the blanks c. short answer d. essay	.031	.111	.093
153.	During which part of the class are you least likely to take good notes a. first 1/4 of the class b. second 1/4 of the class c. third 1/4 of the class d. last 1/4 of the class	-.039	.105	.181*
154.	When taking notes in class I have difficulty understanding what the teacher is presenting a. almost always b. most of the time c. some of the time d. almost never	.243*	.367*	.104
155.	I take class notes pretty much in the same way a. almost always b. most of the time c. some of the time d. almost never	-.242*	-.335*	-.192*

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
156.	I find my notes tend to contain a lot of material which is not important a. almost always b. most of the time c. some of the time d. almost never	-.066	.031	-.163
157.	How often do you have trouble keeping up with the lecturer in your notes? a. almost always b. most of the time c. some of the time d. almost never	.191*	.037	.094
158.	I am on time for lectures and am ready to take notes as soon as the professor begins a. almost always b. most of the time c. some of the time d. almost never	-.206*	-.137	.064
159.	I usually sit a. toward the front of the classroom b. in the middle but slightly toward the front c. in the middle but slightly toward the back d. toward the back of the classroom	-.169*	-.068	.121

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
160.	I review my notes a. when possible, immediately after class b. the same day in which they were taken c. once a week d. the week of the exam	-.017	.195*	.188*
161.	During what part of the class period do you find yourself most actively trying to take good notes a. first 1/4 of the class b. second 1/4 of the class c. third 1/4 of the class d. last 1/4 of the class	.064	-.096	-.100
162.	Which of the following most often characterizes the form of your notes? a. I try to copy as much of what the instructor is saying b. I take notes in outline form (for example, headings, subheadings, details) c. I only attempt to take down the major points d. I very rarely take notes at all	.079	.199*	.111

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
163.	I change my note taking after I have done poorly on an exam a. almost always b. most of the time c. some of the time d. almost never	-.064	-.124	-.001
164.	I find myself taking more notes when I am not clearly understanding what the instructor is saying a. almost always b. most of the time c. some of the time d. almost never	-.140*	.044	.092
165.	I tend to take more notes than usual when the instructor is summarizing the material a. almost always b. most of the time c. some of the time d. almost never	.027	-.112	-.016
166.	If a movie is shown in class I actively take notes on it a. almost always b. most of the time c. some of the time d. almost never	.087	.001	.142

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
167.	I find the instructor much easier to understand when he uses graphs, charts and blackboard illustrations a. almost always b. most of the time c. some of the time d. almost never	.026	.029	-.054
168.	I tend to concentrate on the tables, graphs and pictures in an assignment a. almost always b. most of the time c. some of the time d. almost never	.092	.122	.039
169.	I prefer a test with few illustrations (for example, pictures, graphs, etc.) a. almost always b. most of the time c. some of the time d. almost never	-.167*	-.135	-.147
170.	You are studying a textbook. After reading a number of paragraphs you suddenly realize you have no idea what you have just read because you have been thinking of other things. How often does this happen to you? a. very frequently b. frequently c. sometimes d. almost never	.261*	.225*	.167

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
171.	You have read some material for a course, and you feel that you understood pretty much what was being said. A classmate then asks you a question on the material or you try to recall some of the material yourself and you find that you can't remember much of what you have read. How often does this happen to you? a. very frequently b. frequently c. sometimes d. almost never	.339*	.242*	.177*
172.	You are reading some course material and are not understanding it, but you keep going anyway in order to finish the reading assignment. How often do you do this? a. very frequently b. frequently c. sometimes d. almost never	.185*	.175*	.134
173.	You are reading some course material and are not understanding it so you go back over the material until you do. How often do you do this? a. very frequently b. frequently c. sometimes d. almost never	.147*	.008	.006

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
174.	You are taking a test and you come to a question for which you are sure you know the answer, but you just can't quite remember it. How often does this happen? a. very frequently b. frequently c. sometimes d. almost never	.248*	.218*	.199*
175.	While reading a test or listening to a lecture, I ask myself what good is this information? How can I use it? a. very frequently b. frequently c. sometimes d. almost never	-.022	-.062	.013
176.	I find that during lectures I think of other things and don't really listen to what is being said. a. very frequently b. frequently c. sometimes d. almost never	.142*	.261*	.146

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
177.	It makes me feel good to have finally understood something that was difficult for me a. very frequently b. frequently c. sometimes d. almost never	-.080	.012	-.061
178.	When you come to a test question whose answer you think you know but just can't remember you leave it blank and come back to it later. How often do you do this as compared to the times when you just go ahead and put down an answer right away? a. very frequently b. frequently c. sometimes d. almost never	-.057	-.043	-.021
179.	How often do you have trouble understanding just what a test question is asking? a. very frequently b. frequently c. sometimes d. almost never	.302*	.272*	.224*

*Indicates that the correlations is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
180.	You are reading a course assignment and find that the material actually relates to something that you are interested in. How often does this happen? a. very frequently b. frequently c. sometimes d. almost never	-.334*	-.148	-.197*
181.	I try to explain material I have read to other people a. very frequently b. frequently c. sometimes d. almost never	-.095	.122	-.167 *
182.	I get nervous and uptight when I am studying a. very frequently b. frequently c. sometimes d. almost never	.140 *	.272*	.120
183.	When studying for an exam I am usually a. very nervous and uptight b. somewhat nervous and uptight c. relatively relaxed d. very relaxed	.040	.323 *	.231*

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
184.	When taking an exam I am usually: a. very nervous and uptight b. somewhat nervous and uptight c. relatively relaxed d. very relaxed	.176*	.374*	.252*
185.	I find that information learned in one class helps with the material of other classes a. almost always b. most of the time c. some of the time d. almost never	-.045	.025	.183*
186.	I make a list of important terms and ideas as I come across them in the reading a. almost always b. most of the time c. some of the time d. almost never	.051	.202*	.212*
187.	I try to get an intuitive feel for new concepts a. almost always b. most of the time c. some of the time d. almost never	-.148*	-.148	-.092

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
188.	I like to build on my own previous understanding of the material with the new information presented in class a. almost always b. most of the time c. some of the time d. almost never	-.276*	-.211*	-.146
189.	I like to let the instructor introduce a new subject matter area to me before I try to understand it on my own a. almost always b. most of the time c. some of the time d. almost never	.030	-.086	-.028
190.	I often memorize material without understanding it a. almost always b. most of the time c. some of the time d. almost never	.210*	.289*	.253*
191.	I try to find personal relevance in lecture material and reading material so I will be better able to remember it a. almost always b. most of the time c. some of the time d. almost never	-.198*	-.076	-.056

*Indicates that the correlation is significant at least at the .05 level.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
192.	When studying I try to remember the subjective opinions rather than objective facts a. almost always b. most of the time c. some of the time d. almost never	.022	.009	-.040
193.	I try to find practical application for the material I read a. almost always b. most of the time c. some of the time d. almost never	-.058	.123	.065

Study the following passages as you would to answer questions for a test:

Hatfish, which are orange, live at a depth of two hundred fathoms and feed primarily on plankton. Scalefish are blue and live at six hundred fathoms, feeding primarily on spawn. Bonefish are blue, live at four hundred fathoms, and feed primarily on plankton. Arcfish, which are orange, live at six hundred fathoms and feed primarily on algae. Loopfish are orange and live at a depth of two hundred fathoms, feeding primarily on spawn. Pinfish are blue, live at four hundred fathoms, and feed primarily on algae.

Fish that live at a depth of two hundred fathoms are hatfish and loopfish. Bonefish and pinfish live at four hundred fathoms. The deepest fish are scalefish and arcfish, which live at a depth of six hundred fathoms. Loopfish and scalefish feed primarily on spawn. Plankton is the primary food of hatfish and bonefish. Arcfish and pinfish seem to prefer algae. The color of loopfish, hatfish and arcfish is orange. Blue is the color of pinfish, scalefish and bonefish.

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
194.	I would rather be tested over the first paragraphs than the second a. almost always b. most of the time c. some of the time d. almost never	.073	-.017	-.034
195.	If I were asked to form images (visual pictures) of the fish using just one of the above paragraphs, I would rather read the second passage than the first a. almost always b. most of the time c. some of the time d. almost never	.056	.105	.149

You will be reading about three countries: Bismania, Brontus and Nurovia. You will then be given an exam asking about the type of society, socioeconomic conditions, geography, structure of government and population growth of these countries. If you were given a choice of studying the following materials which format would you prefer to study (that is, which format would you find it easier to learn from and remember everything about all three countries).

In learning about countries unfamiliar to us it is often helpful to characterize them according to the type of society they have, the governmental structure, socioeconomic conditions, population growth, and geography. Bismania, Brontus and Nurovia are three countries that are similar in some of these characteristics but different in others, therefore making each country unique. Bismania, Brontus and Nurovia are all urban countries with Bismania being the most modernized and well developed. The governmental structure of the three countries are different. Bismania is a one party government: Brontus is a democracy and Nurovia is autocratic. The socioeconomic conditions are also different for the three countries, perhaps as a result of the governmental structure. Bismania is enjoying a time of national unity; Brontus on the other hand is in a time of social unrest, and Nurovia has full employment. The population of both Bismania and Nurovia is increasing while Brontus' population is decreasing. The geography of Bismania could be characterized by its lakes as opposed to Nurovia which is in a desert. Brontus has level land on the plains.

COUNTRIES

	Bismania	Brontus	Nurovia
Type of Society	modernized well developed	urban	urban
Socioeconomic Conditions	national unity	social unrest	full employment
Geography	lakes	level, plain land	desert
Structure of Government	one party	democracy	autocratic
Population Growth	increasing	decrease	increase

00095

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
196.	I would prefer to study from the paragraph: a. almost always b. most of the time c. some of the time d. almost never	.069	.067	.148
197.	I would prefer to study from the chart: a. almost always b. most of the time c. some of the time d. almost never	.048	.067	-.032
198.	If I had to memorize the characteristics of each country I would take the first letter from each characteristic, try to remember that string of letters and use this device to help me remember the characteristics a. almost always b. most of the time c. some of the time d. almost never	-.047	.116	.136

00096

Item No.	Item	Correlations With GPA (N=193)	SATV (N=104)	SATM (N=104)
	You are taking a course in introductory mindboggly. Since this course requires a lot of reading you have fallen a couple of chapters behind. Suddenly the prof hits you with a mind boggler of his own. There will be a quiz the next class period. You may choose the type of exam you want. You have to make up two chapters of reading and study the other seven chapters in two days. How well would you probably do on:			
199.	An essay exam a. very good b. good c. fair d. not so good	-.231*	-.219*	-.144
200.	Multiple choice, True-False exam a. very good b. good c. fair d. not so good	-.282*	-.193*	-.270*
201.	A fill in the blank type of exam a. very good b. good c. fair d. not so good	-.291*	-.119	-.031

*Indicates that the correlation is significant at least at the .05 level.

00097

APPENDIX B

Factor Scores Correlations

FACTOR	DESCRIPTION	CORRELATIONS WITH: GPA	SATV	SATM
1	Ability to understand academic material. Also, memorization vs. understanding.	-.235	-.326	-.281

	ITEM	FACTOR LOADING
42.	If there is something I don't understand in a lecture I am more likely to ask one of my friends or classmates to explain it rather than read my text and get the explanation from it a. almost always c. some of the time b. most of the time d. almost never	.462
148.	In taking tests, writing themes, etc., I often find I have misunderstood what is wanted and lose points because of it a. almost always c. some of the time b. most of the time d. almost never	.403
154.	When taking notes in class I have difficulty understanding what the teacher is presenting a. almost always c. some of the time b. most of the time d. almost never	.401
172.	You are reading some course material and are not understanding it, but you keep going anyway in order to finish the reading assignment. How often do you do this? a. very frequently c. sometimes b. frequently d. almost never	.562
174.	You are taking a test and you come to a question for which you are sure you know the answer, but you just can't quite remember it. How often does this happen? a. very frequently c. sometimes b. frequently d. almost never	.493

00099

FACTOR	DESCRIPTION.	CORRELATIONS WITH: GPA	SATV	SATM
1	Ability to understand academic material. Also, memorization vs. understanding.	-.235	-.326	-.281

	ITEM	FACTOR LOADING
183.	When studying for an exam I am usually	.317
	a. very nervous and uptight b. somewhat nervous and uptight c. relatively relaxed d. very relaxed	
190.	I often memorize material without understanding it	.793
	a. almost always b. most of the time c. some of the time d. almost never	

FACTOR	DESCRIPTION	CORRELATIONS WITH: GPA	SATV	SATM
4	Academic Diligence	-.165	-.151	.064

	ITEM	FACTOR LOADING
123.	I usually check over my exam paper for errors before turning it in a. almost always c. some of the time b. most of the time d. almost never	-.419
150.	In taking a test do you go through and answer the questions you are sure of first and then to back to those you are less sure of? a. almost always c. some of the time b. most of the time d. almost never	-.371
154.	When taking notes in class I have difficulty understanding what the teacher is presenting a. almost always c. some of the time b. most of the time d. almost never	.583
158.	I am on time for lectures and am ready to take notes as soon as the professor begins a. almost always c. some of the time b. most of the time d. almost never	-.707

FACTOR	DESCRIPTION	CORRELATIONS WITH: GPA	SATV	SATM
17	Primarily concentration, although this factor is mixed.	-.237	-.203	-.139

	ITEM	FACTOR LOADING
85.	When given a complicated problem I have a very difficult time discovering exactly what is being asked: a. just about always c. some of the time b. most of the time d. almost never	.313
132.	I have a lot of trouble concentrating (that is, I can only study for a very short time before I start daydreaming, etc.) a. almost always c. some of the time b. most of the time d. almost never	.305
141.	I feel like I don't accomplish very much in the amount of time I spend studying a. almost always c. some of the time b. most of the time d. almost never	.37[illegible]
143.	I find that time seems to slip away from me during the day a. almost always c. some of the time b. most of the time d. almost never	.785
148.	In taking tests, writing themes, etc., I often find I have misunderstood what is wanted and lose points because of it a. almost always c. some of the time b. most of the time d. almost never	.339

00102

FACTOR	DESCRIPTION	CORRELATIONS WITH: GPA	SATV	SATM
17	Primarily concentration, although this factor is mixed.	-.237	-.203	-.139

	ITEM	FACTOR LOADING
170.	You are studying a textbook. After reading a number of paragraphs you suddenly realize you have no idea what you have just read because you have been thinking of other things. How often does this happen to you? a. very frequently c. sometimes b. frequently d. almost never	.444
179.	How often do you have trouble understanding just what a test question is asking? a. very frequently c. sometimes b. frequently d. almost never	.414
183.	When studying for an exam I am usually a. very nervous and uptight c. relatively relaxed b. somewhat nervous and uptight d. very relaxed	.329

FACTOR	DESCRIPTION	CORRELATIONS WITH: GPA	SATV	SATM
19	Primarily identification of difficult and important material.	.168	.129	.162

	ITEM	FACTOR LOADING
63.	I make judgments about the difficulty of what I am reading and then adjust my reading rate accordingly a. almost always c. some of the time b. most of the time d. almost never	-.663
67.	I tend to read different kinds of reading materials (for example an article in a newspaper versus a chapter in a textbook) at different rates a. almost always c. some of the time b. most of the time d. almost never	-.680
89.	If there are a number of steps in solving a problem do you check to see if each step is correct before going on? a. almost always c. some of the time b. most of the time d. almost never	-.419
123.	I usually check over my exam paper for errors before turning it in a. almost always c. some of the time b. most of the time d. almost never	-.427
148.	In taking tests, writing themes, etc., I often find I have misunderstood what is wanted and lose points because of it a. almost always c. some of the time b. most of the time d. almost never	.348

FACTOR	DESCRIPTION	CORRELATIONS WITH: GPA	SATV	SATM
19	Primarily identification of difficult and important material.	-.168	-.129	-.162

179.	How often do you have trouble understanding just what a test question is asking? a. very frequently c. sometimes b. frequently d. almost never	.343

00105

FACTOR	DESCRIPTION	CORRELATIONS WITH: GPA	SATV	SATM
22	Systematic approaches to tasks.	—.164	.065	—.062

	ITEM	FACTOR LOADING
106.	In making important decisions (for example, choosing a college or choosing a major) how much information do you generally try to gather before deciding? a. Not much at all, I generally rely on my intuition. b. Quite a bit, but I'm not very systematic about it. c. Quite a bit and I do it in a systematic fashion. d. I try to cover almost every possibility in a systematic way.	.770
141.	I feel like I don't accomplish very much in the amount of time I spend studying. a. almost always c. some of the time b. most of the time d. almost never	.421

00106

FACTOR	DESCRIPTION	CORRELATIONS WITH: GPA	SATV	SATM
23	Primarily emotional reactions to academic tasks.	-.225	-.329	-.246

	ITEM	FACTOR LOADING
90.	In solving a mathematics problem do you have a hard time deciding what procedure to use? a. almost always c. some of the time b. most of the time d. almost never	.306
44.	I find that I have a hard time getting started studying a. almost always c. some of the time b. most of the time d. almost never	.612
157.	How often do you have trouble keeping up with the lecturer in your notes? a. almost always c. some of the time b. most of the time d. almost never	.313
182.	I get nervous and uptight when I am studying a. very frequently c. sometimes b. frequently d. almost never	.791
184.	When taking an exam I am usually a. very nervous and uptight c. relatively relaxed b. somewhat nervous and uptight d. very relaxed	.656

00107

FACTOR	DESCRIPTION	CORRELATIONS WITH: GPA	SATV	SATM
33	Primarily relates to comprehension and retention skills.	.326	.192	.162

	ITEM	FACTOR LOADING
49.	When the class instructor says "this material will not be on the exam" I consciously try to forget the material a. almost always c. some of the time b. most of the time d. almost never	.589
88.	Over which types of material do you generally prefer to be tested? a. specific facts b. general concepts c. relationships between facts and concepts d. theories	.302
142.	How long do you usually study at one time? a. 0-1/2 hour c. 1 - 2 hours b. 1/2 - 1 hour d. 3 hours or more	.308
171.	You have read some material for a course, and you feel that you understood pretty much what was being said. A classmate then asks you a question on the material or you try to recall some of the material yourself and you find that you can't remember much of what you have read. How often does this happen to you? a. very frequently c. sometimes b. frequently d. almost never	.568

FACTOR	DESCRIPTION	CORRELATIONS WITH: GPA	SATV	SATM
33	Primarily relates to comprehension and retention skills.	.326	.192	.162

	ITEM	FACTOR LOADING
173.	You are reading some course material and are not understanding it so you go back over the material until you do. How often do you do this? a. very frequently c. sometimes b. frequently d. almost never	-.345
176.	I find that during lectures I think of other things and don't really listen to what is being said. a. very frequently c. sometimes b. frequently d. almost never	.362
180.	You are reading a course assignment and find that the material actually relates to something that you are interested in. How often does this happen? a. very frequently c. sometimes b. frequently d. almost never	-.649
188.	I like to build on my own previous understanding of the material with the new information presented in class a. almost always c. some of the time b. most of the time d. almost never	-.569

FACTOR	DESCRIPTION	CORRELATIONS WITH: GPA	SATV	SATM
33	Primarily relates to comprehension and retention skills.	.326	.192	.162

	ITEM	FACTOR LOADING
191.	I try to find personal relevance in lecture material and reading material so I will be better able to remember it a. almost always c. some of the time b. most of the time d. almost never	-.381
	You are taking a course in introductory mindboggly. Since this course requires a lot of reading you have fallen a couple of chapters behind. Suddenly the prof hits you with a mind boggler of his own. There will be a quiz the next class period. You may choose the type of exam you want. You have to make up two chapters of reading and study the other seven chapters in two days. How well would you probably do on:	
201.	A fill in the blank type of exam a. very good c. fair b. good d. not so good	-.361

FACTOR	DESCRIPTION	CORRELATIONS WITH		
		GPA	SATV	SATM
41	Academic Stamina	-.169	.049	-.016

	ITEM	FACTOR LOADING
45.	Once I get started I find it easy to continue studying for a relatively long time a. almost always c. some of the time b. most of the time d. almost never	-.749
70.	When studying for an exam I find myself looking quickly through the textbook for specific information a. almost always c. some of the time b. most of the time d. almost never	-.358
142.	How long do you usually study at one time? a. 0-1/2 hour c. 1 - 2 hours b. 1/2 - 1 hour d. 3 hours or more	.409
	You are taking a course in introductory mind-boggly. Since this course requires a lot of reading you have fallen a couple of chapters behind. Suddenly the prof hits you with a mind boggler of his own. There will be a quiz the next class period. You may choose the type of exam you want. You have to make up two chapters of reading and study the other seven chapters in two days. How well would you probably do on:	-.315
199.	An essay exam a. very good c. fair b. good d. not so good	

00111

Factors	1	4	17	19	22	23	33	41
1	1.0							
4	.006	1.0						
17	.009	.022	1.0					
19	.008	-.010	-.003	1.0				
22	.001	-.006	-.009	-.005	1.0			
23	.322*	.143*	.401*	-.010	-.015	1.0		
33	.246*	.085	.127*	-.043	.247*	-.015	1.0	
41	-.073	.171*	.024	.218*	.136*	-.003	-.003	1.0

Intercorrelations Among Those Factors

Correlating .16 or Greater

With Grade Point Average

00112